

ROBERT E. COVINGTON
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M/047/013
ZI-95-1 AMENDMENT

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March 1, 1996

Anthony A. Gallegos
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center Suite 350
Salt Lake City, UT 84180-1203

Re: Submittal of Amendment to Large Mining Plan
State of Utah ML-46565
Section 16, T9S-R24E
Uintah Co., Utah

MAR - 4 1996

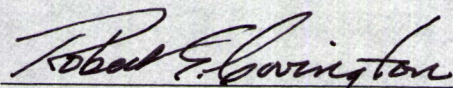
Dear Anthony:

In accordance with your letter to Ziegler Chemical & Mineral Corporation dated February 21, 1996, enclosed please find the additional data requested by your office.

The soil samples will be taken in the field on Monday, March 4th, 1996 and will be sent to the Soils Testing Laboratory at Utah State University, Brigham City, Utah as per your instructions. As soon as we have received the soil analyses, we will forward a copy to all parties listed below.

I hope that the bonding issue may be resolved shortly so that we can have your office and SITLA's approval.

Very truly yours,



ROBERT E. COVINGTON, CPG No.1705
Consultant for Ziegler Chemical & Mineral Corp.

cc: Will Stokes, SITLA
BLM District Office
Gordon S. Ziegler
Norman R. Haslem

ZI-95-1 AMENDMENT

AMENDMENT TO LARGE MINING OPERATIONS
ZIEGLER CHEMICAL & MINERAL CORPORATION
M/047/013
UTAH STATE GILSONITE LEASE ML-46565
SECTION 16, T9S-R24E,, UINTAH CO., UTAH

BY
ROBERT E. COVINGTON
CERTIFIED PROFESSIONAL GEOLOGIST NO. 1705

MAR - 4 1996

REPORT FOR:
GORDON S. ZIEGLER, JR.. PRESIDENT
ZIEGLER CHEMICAL & MINERAL CORPORATION
FEBRUARY 29, 1996

AMENDMENT TO LARGE MINING OPERATIONS, ZI-95-1, ZIEGLER CHEMICAL
& MINERAL CORPORATION, M/047/013, UINTAH COUNTY, UTAH (INDEPENDENT VEIN)

106.3 ESTIMATED ACREAGES DISTURBED, RECLAIMED, ANNUALLY

Disturbance for the shaft sites is calculated to be 2.12 acres for each shaft site, with the total acreage to be disturbed as 4.55 acres. Annual disturbance will be maintained with no increase during the estimated period of mining on this lease, calculated at 10 years. During this time frame reclamation of the disturbed area is not feasible and is not therefore contemplated.

106.4 NATURE OF MATERIALS MINED, WASTE, AND ESTIMATED TONNAGES

The only ore to be mined on this lease is gilsonite. During the sinking of the two shafts there will be waste rock mined, since the gilsonite vein is not of sufficient width to accomodate the 7 feet wide cage compartment. Total cubic yards of rock is therefore estimated at 370. This waste rock is essentially barren of any gilsonite and will be stockpiled. Upon completion of mining operations it will be pushed into the mine before closure of the shafts. Occassional stringers of gilsonite are encountered which are so thin or are so interbedded with the wall rock that the ore cannot be recovered. This material will be stockpiled with the waste rock.

106.5 EXISTING SOIL TYPES, LOCATION, AMOUNT

The soils which are located within the area to be disturbed are of the Walknolls soil, consisting of a mixture of Walknolls HEP2-Walknolls Dry. The slopes are convex-concave and 50 to 100 feet long. Elevation is from 5100 to 5300 feet within the soil series in the area. The average annual precipitation is from 6 to 9" and the mean annual air temperature is from 44 to 49 degrees F. The freeze free period is 110 to 140 days. This Walknolls soil is both shallow and very shallow and well drained. It formed in residuum and colluvium derived predominately from sandstone and shale. The pH ranges from 7.9 to 9.0.

The Walknolls Drysoils have about the same depth, ranging from 6 to 20" to bedrock, shallow to very shallow. More than 90% of the surface consists of pebbles of various sizes and kinds. The surface texture is extra stony loam, about 2" in thickness.

Samples of the soil from the area will be taken and sent to Utah State University's Soils Testing Laboratories, Brigham City, Utah for analysis of texture, pH, SAR, EC, % Organic Matter, Cation Exchange Capacity and fertility (Nitrogen, Phosphorous (as P_2O_5) and Potassium. The topsoil will be removed with a backhoe and shovels, when required, and stockpiled on a flat surface away from any drainage patterns. Due to the extremely rocky character of the surface, a topsoil thickness of 2" was used in the calculation of the 1,209 cubic feet total topsoil.

106.6 PLAN FOR PROTECTING & REDEPOSITING SOILS

The stockpiled topsoil will be protected as stated above by placing it on a flat, level surface, out of and away from any drainages. The topsoil will be redeposited using a backhoe and/or a motor grader. In rocky places hand shoveling may be required.

106.7 EXISTING VEGETATION-SPECIES & AMOUNT

After a period of consultations with Keith Chapman with the Vernal office of the Bureau of Land Management, their inventory showed the following:

A. WALKNOLLS SERIES-GENERAL:

Mainly Wyoming big sagebrush
Shadscale
Winterfat
galleta
Indian ricegrass

B. WALKNOLLS DRY:

Mainly black sagebrush
Shadscale
Small rabbit brush
galleta
broom snake weed

The Bureau of Land Management notes that permeability of this Walknolls soil is moderately rapid. Available water capacity is about 0.75 to 1.5 inches. Water supplying capacity is 1.5 to 2.5 inches. Effective rooting depth is 6 to 20", The organic matter content is about 1 to 2 percent. Runoff is rapid and the hazard of water erosion is moderate. The BLM also states that it is hazardous or impractical to attempt re-vegetation on large areas of this type of soil because of low annual precipitation and shallow soils. The BLM reports also state that plants that may be suitable for critical area seedings are the above listed plants and kochia.

In summary, the Walknolls soil is in capability subclass VIIe, non-irrigated, and in Semidesert Shallow Loam (Wyoming Big Sagebrush) ecological site. The Walknolls dry soil is in capability subclass VIIs, non-irrigated, and in Desert Shallow Loam (Black Sagebrush) ecological site. The recommended Attachment for revegetation will be followed. (CODG letter of 2-21-96).

R647-4-107 OPERATION PRACTICES

107.5 SUITABLE SOILS REMOVED & STORED

See comments under R647-4-106.5 & 106.6.

R647-4-109 IMPACT ASSESSMENT

109.1 IMPACTS TO SURFACE & GROUND WATER SYSTEM

With reference to the underground mining operations, as set forth in the Notice of Intention to Mine-Small Mining Operations, it involves sinking of 2 shafts and then mining the northwest trending veins of gilsonite in a northwest-southeast direction vertically. In this underground open-cut vein system, some water seeps into some mines, but in general there is no "water table" in the area of the Ziegler Chemical & Mineral Operations. Since the vein workings are not exposed at the surface, other than at the shaft sites, there is no surface incursion of waters into the vein system, and no impact.

109.2 IMPACTS TO THREATENED & ENDANGERED WILDLIFE/HABITAT

The proposed gilsonite mining area lies within Antelope Herd Unit 7-the Bonanza Herd. This unit encompasses 80,900 acres and is considered crucial antelope habitat. The presence of water is a limiting factor in the maintenance of the herd. Limited surface operations will preclude any impact to the antelope. The herd appears healthy where observed. There are no known grouse strutting grounds within 2 miles of the proposed mining area. There are no known golden eagle or other raptor nests within 1 mile of the proposed plan of mining.

Prarie dog colonies of sufficient size and density to meet the criteria of U.S.Fish & Wildlife do not occur in the mining plan area. No sightings of the black footed ferret have been found in the area, which would be expected when the prarie dog colonies are not of acceptable size to allow their habitation.

The lack of any trees whatsoever precludes the proposed mining plan area from the Bald Eagle (*Haliaeetus leucocephalus*) nesting or winter roosting in the area. None have ever been sighted. Their use of the area is limited, seasonal and occurs primarily along the wooded areas of the Green River. No Peregrine Falcons have ever been sighted in the area, probably for the same reasons given for the Bald Eagle. The proposed mine sites are so barren of grasses that no Mountain Plovers have been sighted in the area. Although the ferruginous hawk has been sighted to the north, none has been seen in the proposed area of mining.

109.5 ACTIONS TO MITIGATE ANY IMPACTS

Since there are no known impacts to wildlife or to the environment , no actions need to be undertaken in this respect.

R647-4-110 RECLAMATION PLAN

110.1 CURRENT & POST MINING LAND USE

Current use of the land surrounding the proposed Ziegler Gilsonite mining operations including mining, oil and gas development and production, water injection wells and grazing. Post-mining land use will be essentially the same as prior use.

110.5 REVEGETATION PLANTING PROGRAM

The area of disturbance has been calculated to be 4.5 acres. This includes the area around the two proposed shafts which will be constructed simultaneously, with shaft No.2 being used as an escape-way during the initial phases of mining Shaft No.1.

Upon completion of mining operations the surface facilities will be moved and restoration of the land will be undertaken. The land will be restored to its original contour after the two shafts have been sealed in accordance with the plans set forth in R647-4-109, this report. The stockpiled topsoil will be spread evenly across the disturbed areas. There are no slopes which cannot be effectively re-contoured and reseeded. No sediment ponds, diversion channels or culverts are contemplated in the initial phase of setup operations. There are no perennial streams, springs or bodies of water on or near the proposed mine site. Mining operations to the southeast have shown that there is no groundwater in the area. Some seepage occurs within the vein system of ground water, but is not significant nor is it a source for ground water mining or development. Seeding will be done in conformance with the State of Utah's requirements. The probable suite of seedlings is set forth in Section R647-4-106.7, this report. A tractor will level the area..Prior to the spreading of the seed the area will be ripped or disked to a minimum 6 inch depth, and the area will be left in a "roughened" condition.

R647-4-111 RECLAMATION PRACTICES

111.8 ALL ROADS AND PADS RECLAIMED

All roads, pads and compacted areas will be reclaimed as set forth in 110.5.

R647-4-111 RECLAMATION PRACTICES, CONTD.

111.13 REVEGETATION- ADAPTABLE SPECIES

See comments under R647-4-110.5.

R647-4-113 VARIANCE

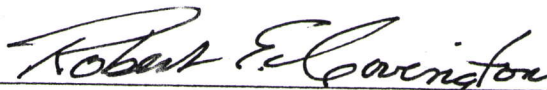
No variances from sections R647-4-107 Operation Practices, R647-4-108 Hole Plugging Requirements and/or R647-4-111 Reclamation Practices are requested in this submission.

R647-4-113 SURETY

Ziegler Chemical & Mineral Corporation herewith accepts the estimate as prepared by the Division of Oil, Gas & Mining, State of Utah, as set forth in their letter of February 21, 1996 attachments.

R647-4-115 CONFIDENTIAL INFORMATION

This submission contains no information identified as being of a confidential nature.



ROBERT E. COVINGTON, CERTIFIED PROFESSIONAL GEOLOGIST NO. 1705
CONSULTANT FOR ZIEGLER CHEMICAL & MINERAL CORPORATION

February 29, 1996

cc: Gordon S. Ziegler, Jr.
Will Stokes, SITLA (ML-46565)
Norman R. Haslem
Bureau of Land Management, District Office, SLC, UT
DOGM Anthony A. Gallegos